

## CLAIMS

- 1 1. A system for reporting information related to predetermined storage volumes in a  
2 network including at least one storage appliance comprising:  
3 a monitor process that identifies volumes and retrieves statistical information with  
4 respect to the volumes;  
5 an interface adapted to enable volumes to be associated with a group; and  
6 a reporting process that organizes and displays the statistical information with re-  
7 spect to the volumes associated with the group to interested parties.
- 1 2. The system as set forth in claim 1 wherein the reporting process includes an event  
2 process for determining identities of the interested parties with respect to a predetermined  
3 event condition with respect to the volumes based upon the statistical information and for  
4 notifying the interested parties.
- 1 3. The system as set forth in claim 2 wherein the event conditions include parame-  
2 ters of the volume and an associated device of the volume that exceed threshold levels.
- 1 4. The system as set forth in claim 3 wherein the parameters include at least one of a  
2 central processing utilization level, a storage disk free space, a storage disk used space,  
3 an environmental condition and operational status.
- 1 5. The system as set forth in claim 3 wherein the event process includes is adapted to  
2 e-mail event information to at least some of the interested parties.
- 1 6. The system as set forth in claim 5 wherein the e-mail of the event information in-  
2 cludes web links for use by the interested parties.
- 1 7. The system as set forth in claim 3 further comprising a database that retains in-  
2 formation with respect to the interested parties and the threshold levels for the parame-  
3 ters.

1 8. The system as set forth in claim 1 wherein the each of the volumes are attached to  
2 each of a plurality of filers, respectively.

1 9. The system as set forth in claim 1 further comprising a command process for gen-  
2 erating web pages that report the statistical information to at least some of the interested  
3 parties.

1 10. The system as set forth in claim 9 wherein the web pages are constructed and ar-  
2 ranged as graphical user interfaces that enable display of the statistical information in a  
3 plurality of predetermined windows and boxes within the windows based upon selection  
4 criteria entered by the interested parties.

1 11. The system as set forth in claim 10 further comprising alerts displayed on the  
2 graphical user interface based upon problems identified by the monitor process with re-  
3 spect to the volumes or devices associated with the volumes.

1 12. The system as set forth in claim 11 wherein the alerts are color-coded based upon  
2 severity of the problems, respectively.

1 13. The system as set forth in claim 1 wherein the reporting process is adapted to con-  
2 solidate the statistical information from one or more volumes on one or more of the vol-  
3 umes on one or more storage appliances into the group.

1 14. A graphical user interface for use with a management station or client attached to  
2 a network having storage volumes comprising:

3 a display window that enables at least one of the volumes to be selectively associ-  
4 ated with a desired group of interested parties; and

5 a display window that shows information related to performance and status of the  
6 volumes of the group based upon criteria selected by the user.

1 15. The graphical user interface as set forth in claim 14 wherein the information in-  
2 cludes at least one of central processing unit usage, volume disk free space, volume disk  
3 used space; environmental conditions; general operational status and events in which an  
4 operational parameter exceeds a predetermined threshold.

1 16. The graphical user in interface as set forth in claim 15 wherein the events include  
2 alerts that are color-coded based upon severity of a problem.

1 17. The graphical user interface as set forth in claim 15 further comprising a link box  
2 that directs a user to network or Internet-based utilities in connection with the informa-  
3 tion.

1 18. The graphical user interface as set forth in claim 14 wherein each display window  
2 is formatted as a web page and is displayed on a web browser.

1 19. A method for reporting information related to predetermined storage volumes in a  
2 network including at least one storage appliance comprising the steps of:  
3 identifying volumes and retrieving statistical information with respect to the vol-  
4 umes;  
5 associating at least one of the identified volumes with a group; and  
6 organizing and displaying the statistical information with respect to the volumes  
7 associated with the group to interested parties.

1 20. The method as set forth in claim 19 wherein the step of reporting includes e-  
2 mailing the statistical information to at least some of the interested parties.

1 21. The method as set forth in claim 20 further comprising formatting a web page  
2 containing the statistical information in a predetermined display format.

1 22. The method as set forth in claim 21 further comprising changing the predeter-  
2 mined display format based upon user-selected criteria.

1 23. The method as set forth in claim 19 wherein the step of organizing and displaying  
2 includes displaying event information related to predetermined of the statistical informa-  
3 tion that exceeds desired parameters.

1 24. The method as set forth in claim 23 wherein the step of displaying the event in-  
2 formation includes providing color-coded alerts that indicated a severity of a problem as-  
3 sociated with the respective event.

1 25. A computer-readable medium operating on a computer in a network that includes  
2 one or more storage appliance having volumes, the computer-readable medium including  
3 program instructions for performing the steps of:  
4 identifying storage volumes and retrieving statistical information with respect to  
5 the volumes;  
6 associating at least one of the identified volumes with a group; and  
7 organizing and displaying the statistical information with respect to the volumes  
8 associated with the group to interested parties.

1 26. A method for organizing and displaying information with respect to one or more  
2 volumes on one or more storage appliances attached to a network, each of the volumes  
3 having statistical information associated therewith, the method comprising the steps of:  
4 establishing a group of one or more of the volumes based upon predetermined re-  
5 porting criteria; and  
6 consolidating statistical information collected with respect to the volumes in the  
7 group for display to interested parties.

1 27. The method as set forth in claim 26 further comprising comparing known prede-  
2 termined threshold values to parameters of the statistical information generating an event  
3 condition when the at least one of the parameters exceeds at least one of the threshold  
4 values, respectively.

- 1 28. The method as set forth in claim 21 further comprising notifying at least one of  
2 the interested parties based upon the event condition using an electronic message.

Received: 04/03/01